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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,278	03/31/2004	Timothy M. Enloe	118567	5435
27074	7590	10/24/2006	EXAMINER	
OLIFF & BERRIDGE, PLC. P.O. BOX 19928 ALEXANDRIA, VA 22320			JANKUS, ALMIS R	
			ART UNIT	PAPER NUMBER
			2628	

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/813,278

**Applicant(s)**

ENLOE, TIMOTHY M.

**Examiner**

Almis R. Jankus

**Art Unit**

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☒ Claim(s) 8, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: ~~2672~~  
2628

### DETAILED ACTION

1. Claims 1-16 are presented for examination.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7 and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Teller et al.

Teller et al. teach the claimed defining an arc, at sections 2 and 3; and dividing the arc into a plurality of sub-arcs, at figure 2 with the standard segment for an ellipse, each sub-arc being defined by a conic curve definition, at page 304 with equation 3 having  $t$  ranging from  $[0..1]$  defining the standard segment for an ellipse.

Claim 2 further requires each of the sub-arcs is 90 degrees or less. Teller et al. teach this at figure 2 where the sub-arc (standard segment) is 90 degrees.

Claim 3 further requires determining a bounding box; and calculating vector angles for a starting vector and ending vector. Figure 2 shows a quadrant of the bounding box for an ellipse which would have corresponding vectors at 90 degrees from the center of the ellipse to the tangent points of the shown quarter bounding box.

Claim 4 further requires determining a starting point and ending point of each of the plurality of sub-arcs, wherein the plurality of sub-arcs includes at least a first sub-arc and a second sub-arc and further wherein the ending point of the first sub-arc is the starting point of the second sub-arc. Figure 2 shows the standard segment (first sub-arc) for an ellipse with starting and ending points. The remainder of the curve, the extended segment (second sub-arc) completes the ellipse when joining to the starting and ending points.

Claim 5 further requires calculating a shape parameter for the conic curve definition.  
Teller et al. teach this at page 304.

Claim 6 further requires determining coordinates of a control point and a mid point of an arc chord. Teller et al. teach this at page 304, at figure1 and with  $t_s$  equal to one half (right column at page 304).

Claim 7 further requires defining a control point segment between the mid point of the arc chord and the control point. Teller et al. teach this at page 304 at figure 1.

Claim 9 further requires a direction of the arc is clockwise; claim 10 further requires a direction of the arc is counter clockwise. Teller et al. teach this at page 314 as identical behavior under affine transformations.

Claim 11 further requires transmitting the conic curve definitions to an imager. Teller et al. teach this at page 314 as rendering of conics.

Claim 12 further requires a computer-readable medium having computer-readable program code embodied therein, the computer-readable program code performing the method of claim 1. Teller et al. teach this at page 310 as a modeling environment, and at page 314 as rendering of conics, all require computer medium.

4. Claims 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Zirbel et al.

With respect to claim 13, Zirbel et al. teach the claimed an arc definer, which defines the arc using a bounding box, starting vector and ending vector, at page 446 figure 15.16 with the ellipse is bounded by the major and minor axes, as is well understood from elementary geometry, and also shown at page 443, the starting vector from the center point to endpoint 1, the ending vector from the center point to endpoint 2; and an arc

divider, which divides the arc into component sub-arcs, at figure 15.16 the first sub-arc being the short arc from endpoint 1 to endpoint 2.

Claim 14 further requires the arc divider further determines a starting point and ending point for each sub-arc. Zirbel et al. teach this at figure 15.17 at page 446.

5. Claims 8, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 8, the prior art of record does not fairly teach the claimed calculating the shape parameter based on a ratio of a distance between the mid point of the arc chord and an intersection of the control point segment and the sub-arc, and a length of the control point segment

With respect to claim 15, the prior art of record does not fairly teach the claimed control point determining module, which determines the control point for each sub-arc, based on the intersection point of the two lines which are tangent to the endpoints of the sub-arcs;

and a shape parameter module which calculates a shape parameter, based on the ratio of a distance between the mid point of the arc chord and an intersection of a control point segment and the sub-arc, and a length of the control point segment.


Claim 16 depends from claim 15.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R. Jankus whose telephone number is 571-272-7643. The examiner can normally be reached on M-F, 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJ

  
ALMIS R. JANKUS  
PRIMARY EXAMINER